IN THE CLAIMS:

1-10 (canceled).

11. (Previously presented) An optical attenuator in the form of a single mode optical fiber for receiving an optical signal, attenuating the optical signal and outputting the attenuated optical signal, said optical attenuator comprising a core containing a dopant which attenuates the optical signal more when its wavelength is longer, said dopant being contained only in a dopant area limited to a centermost portion of said core, said core comprising said centermost portion and a peripheral portion contiguous with said centermost portion and free of dopant, said core having a refractive index at said centermost portion greater than that of said peripheral portion, said optical fiber having a mode field for single mode transmission of the optical signal inclusive of said centermost and peripheral portions of said core.

12. (Previously presented) The optical attenuator as claimed in claim 11, having a distribution of refractive index of said dopant area in the form of a gradient selected from the group consisting of a graded-index type, parabolic shapes, triangular wave shapes, square wave shapes and trapezoidal wave shapes.

13. (Previously presented) The optical attenuator as claimed in claim 11, further comprising cladding on and surrounding said core, said cladding not containing dopant.

14. (Previously presented) An optical attenuator in the form of a single mode optical fiber for receiving an optical signal, attenuating the optical signal and outputting the attenuated optical signal, said optical attenuator comprising a core containing a dopant which attenuates the optical signal more when its wavelength is shorter, said dopant being contained only in a dopant area limited to a peripheral portion of said core, said core comprising a centermost portion free of dopant and said peripheral portion contiguous with said centermost portion, said core having a refractive index at said centermost portion greater than that of said peripheral portion, said optical fiber having a rnode field for single mode transmission of the optical signal inclusive of said centermost and peripheral portions of said core.

15. (Previously presented) The optical attenuator as claimed in claim 14, wherein the refractive index has a profile selected from the group consisting of a graded-index type parabolic shapes, triangular wave shapes, square wave shapes and trapezoidal wave shapes.

16. (Previously presented) The optical attenuator as claimed in claim 14, further comprising cladding on and surrounding said core, said cladding not containing dopant.

17. (canceled)

18. (canceled)

19. (canceled)

20. (Previously presented) An optical attenuator in the form of a single mode optical fiber for receiving an optical signal, attenuating the optical signal and outputting the attenuated optical signal, said optical attenuator comprising a core containing a dopant which attenuates the optical signal more when its wavelength is longer, said dopant being contained only in a dopant area limited to a peripheral portion of said core, said core comprising a centermost portion free of dopant and said peripheral portion contiguous with said centermost portion, said core having a refractive index at said centermost portion greater than that of said peripheral portion, said optical fiber having a mode field for single mode transmission of the optical signal inclusive of said centermost and peripheral portions of said core.

21. (Previously presented) The optical attenuator as claimed in claim 20, wherein the refractive index has a profile selected from the group consisting of a graded-index type, parabolic shapes, triangular wave shapes, square wave shapes and trapezoidal wave shapes.

22. (Previously presented) The optical attenuator as claimed in claim 20, further comprising cladding on and surrounding said core, said cladding not containing dopant.

23. (New) An optical attenuator in the form of a single mode optical fiber for receiving optical signals having wavelengths within a predetermined range of wavelengths, attenuating a received optical signal and outputting the attenuated optical signal, said optical attenuator comprising a core containing a dopant which attenuates the received optical signal more when its wavelength is shorter within the predetermined range of wavelengths, said dopant being contained only in a dopant area limited to a centermost portion of said core, said core comprising said centermost

portion and a peripheral portion contiguous with said centermost portion and free of dopant, said core having a refractive index at said centermost portion greater than that of said peripheral portion, said optical fiber having a mode field for single mode transmission of the optical signal inclusive of said centermost and peripheral portions of said core.

24. (New) The optical attenuator as claimed in claim 23, wherein the refractive index has a profile selected from the group consisting of a graded-index type, parabolic shapes, triangular wave shapes, square wave shapes and trapezoidal wave shapes.

25. (New) The optical attenuator as claimed in claim 23, further comprising cladding on and surrounding said core, said cladding not containing dopant.